

Geoinformatics (GI) webinar

Program solicitation NSF 23-594

Concept Outline due (Sustained Resources track only) – upcoming competition:

September 1, 2023

Full proposal target date – upcoming competition:

December 1, 2023

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WEBINAR LOGISTICS

- We will start with an overview presentation for the Geoinformatics solicitation
- Following the presentation, time will be provided for general Q&A (next slide)
- Proposal-specific questions may be directed to Program Contacts listed on the Geoinformatics program page
- Webinar (including Q&A) will be **recorded** and posted on the Geoinformatics program page: <https://new.nsf.gov/funding/opportunities/geoinformatics-gi>

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Zoom webinar set-up

- All attendees are muted, and webcams are disabled.
- To enable live transcript, click on the  feature.
- To ask a question, please use the  feature.
 - You may submit questions at any time.
 - You may send questions anonymously:

How can...|

Send anonymously

PROGRAM OVERVIEW

Topics to be covered:

- Motivation
- Goals for Geoinformatics
- Scientific scope of Geoinformatics
- Relation to other programs
- Geoinformatics proposal tracks

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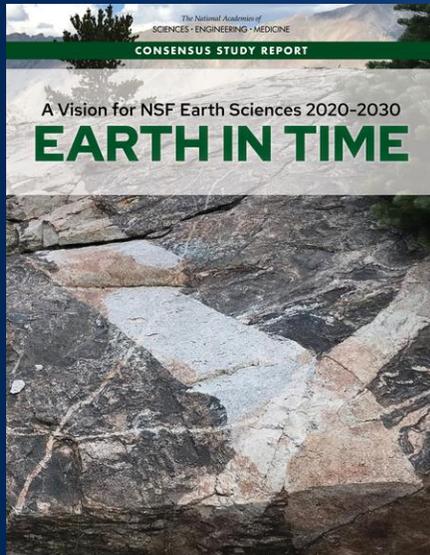
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Motivation

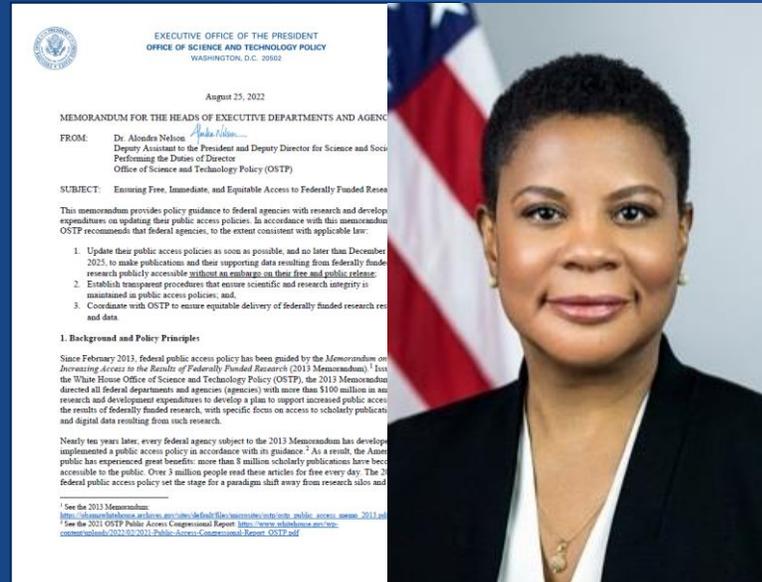
Providing advanced data analysis, modeling, and computation capabilities for addressing priority Earth Sciences questions



National Academies of Science, Engineering, and Medicine, 2020



Enabling management and sharing of data, physical samples, and other research objects per federal, NSF, and EAR requirements



Office of Science and Technology Policy "Nelson Memo," 2022

Supporting cyberinfrastructure (CI) that enables open, inclusive, and transparent research practices in the Earth Sciences



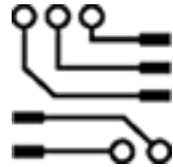
<https://www.gida-global.org/care>

- **TRUST** Principles for digital repositories
- Reproducibility & Replicability

Geoinformatics program goals



Enable the management of and access to data, physical samples, and other research products in the Earth Sciences



Facilitate use and development of open-source models and software, preferably leveraging shared resources and collaborative approaches



Foster reproducible and transparent modes of research and education in the Earth Sciences



Increase the capacity of Earth Scientists to utilize cyber-infrastructure (CI) resources

Scientific scope of Geoinformatics

Geoinformatics (GI) focuses on deployment and operation of CI that advances research and education in the **Earth Sciences**

“Earth Sciences” refers to the academic research communities supported by NSF’s Division of Earth Sciences (EAR) <https://www.nsf.gov/funding/programs.jsp?org=EAR>

GI does **not** support:

- Research-driven projects
- Computer hardware development or major acquisition
- Curation, management, and accessibility of physical samples / collections (but associated CI is supported)



GI in relation to EAR programs

- **Geoinformatics (GI)** (NSF 23-594) focuses on the deployment and operation of cutting-edge CI capabilities that serve Earth Scientists
- **EAR Instrumentation & Facilities (EAR/IF)** (NSF 22-577) supports instrument-based and human research infrastructure, including acquisition of computer hardware
- Proposals to **EAR Disciplinary Programs** may include CI development in the context of advancing science research objectives (check with Cognizant POs prior to submission)



GI in relation to other NSF programs

Directorate for Geosciences (GEO) Research, Innovation, Synergies, and Education (RISE)

- **GEO Open Science Ecosystem** (NSF 23-534) supports improvement and democratization of access to open science resources in the geosciences

Office of Advanced Cyberinfrastructure (OAC)

<https://www.nsf.gov/geo/geo-ci/>

- **Cyberinfrastructure for Sustained Scientific Innovation (CSSI)** (NSF 22-632): Supports projects primarily focused on technical innovation for CI tools and services

Directorate for Technology, Innovation, and Partnerships (TIP)

- **Pathways to Enable Open-Source Ecosystems (POSE)** (NSF 23-556) supports ecosystems of open-source products (e.g., software)

GEO Cyberinfrastructure
Opportunities



Geoinformatics proposal tracks

Innovative Resources

- **Early-stage** development, deployment, and community-building for CI resources that serve Earth Sciences research and education
- **Up to 3 years duration**
- **\$200,000 / year budget limit** per project

Sustained Resources

- **Sustained operations** and user community support for mature CI resources that serve Earth Sciences research and education
- **3-4 years duration** (for December 2023 target date)
- **No specific budget limit**, but budget should be commensurate with size and scope



PROPOSAL PREPARATION

Topics to be covered:

- Submission eligibility
- Concept Outlines
- Merit review criteria
- Leveraging shared computing
- Budget preparation
- Other supplementary documents

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Submission eligibility

Organizations eligible to submit proposals:

- Institutions of Higher Education (IHEs)
- Non-profit, non-academic organizations

Partnerships with other organizations:

- Proposers are encouraged to pursue partnerships between academia, industry, and others, e.g., via subawards and/or unfunded collaborations.

For the Sustained Resources track a Concept Outline must be submitted in advance of the full proposal.



Concept Outline

- **Sustained Resources** track proposers **must** submit a “Concept Outline” in advance of full proposal submission
- The **Concept Outline** must be submitted **at least 3 months in advance** of the target date (by Sept. 1, 2023, for the upcoming competition)
- Lead PI submits a single Concept Outline on behalf of the entire project
 - Via email to cognizant Program Officer *or*
 - Via the Program Suitability and Proposal Concept Tool (**ProSPCT**) website (<https://suitability.nsf.gov/s/>)
- An NSF Program Officer (PO) will review the Concept Outline and will provide feedback within 1 month of its submission
 - Upload this PO response email as a “Single Copy Document” with full proposal



Concept Outline (cont'd)

Concept Outline contents:

- 1. Submission Title.** Expected title of the proposal.
- 2. Project Personnel.** Names and organizational affiliations of all expected senior personnel.
- 3. Concept Outline Text** (up to 6,000 characters with spaces):
 - Expected user community for the proposed cyberinfrastructure (CI)
 - Expected scope of major activities for the project
 - Expected budget size (total budget and budget per major activity) to achieve the expected project scope

*The **NSF PO response email** will provide a **preliminary** assessment of appropriateness and potential for support of proposed activities. This input may be incorporated into the development of the full proposal.*



Standard NSF proposal review criteria



Intellectual Merit

encompasses the potential to
advance knowledge



Broader impacts

encompasses the potential to
benefit society

Both review criteria must be addressed in the proposal.



See "General Considerations" in the Program Description

Solicitation specific review criteria (1)

Metrics and Assessment:

- How well do proposed metrics and/or other assessment mechanisms provide effective approaches to evaluating success?
- Are appropriate plans in place to monitor progress throughout the project to inform CI development that is responsive to user needs?



Solicitation specific review criteria (2)

Sustainable Management:

- How well do proposed plans for project management, governance, scalability, and sustainability articulate effective mechanisms to adapt to user needs and to ensure continuity of outcomes beyond project completion?
- Are appropriate plans in place for partnerships?
- For the Sustained Resources track, is each proposed major activity achievable based on the description of expected personnel roles and responsibilities, timeline of work, and breakdown of work commitments, costs, and deliverables?



Ways to leverage NSF-supported shared computing

- Advanced computing support available via the **ACCESS (Advanced Cyberinfrastructure Coordination Ecosystem: Services & Support) program** - <https://access-ci.org/>
- **High-Throughput Computing (HTC) resources** available via the PATH (Partnership to Advance Throughput Computing) project - <https://path-cc.io/>
- Commercial **cloud computing resources** available via CloudBank Cloud Access - <https://www.cloudbank.org/faq>



Budget preparation

- **Innovative Resources:** \$200,000 / year budget limit per project, up to 3 years duration
- **Sustained Resources:** No upper limit, 3-4 years duration for December 2023 target date
- **CloudBank.org:** Costs count toward budget limit but should *not* be listed on budget page; rather, specify this in associated supplementary document



Data management plan (DMP)

****Please note the EAR Data & Sample Policy was updated in July 2023****

see Dear Colleague Letter NSF 23-131: <https://www.nsf.gov/pubs/2023/nsf23131/nsf23131.jsp>

The DMP should describe...

1. The **types of data and samples** expected to result from the proposed work
 - See the EAR Data & Sample Policy for definitions of “data” and “samples”
2. How each type of data or sample will be **deposited, made accessible, and preserved**:
 - For each **data / sample type**, the DMP should identify appropriate **long-lived FAIR-aligned repository(ies)** for data (& sample metadata) deposit, access, and preservation
 - **Data (& sample metadata) underlying publications** must be available *upon publication*
 - **Other project data (& sample metadata)** must be made available *no later than 2 years after collection/generation* (*exceptions must be justified*)



Postdoctoral Researcher Mentoring Plan (PRMP)

- The PRMP is required if funding is requested to support postdoctoral researchers (single document across collaborative proposals)
- The PRMP should describe mentoring activities for funded postdocs



Other supplementary documents

1. **Letters of Collaboration (if applicable):** To demonstrate collaborative arrangements
2. **High-Throughput Computing Resources (if applicable):** Required if requesting HTC resources
3. **Cloud Computing Resources (if applicable):** Required if requesting cloud credits through CloudBank



Other Important Proposal Reminders

- **Title:** Please note that titles should be preceded with “Innovative Resources” or “Sustained Resources”
- **Project Description:** 15-page limit for Innovative Resources, 20-page limit for Sustained Resources
- Updated PAPPG (Proposal & Award Policies & Procedures Guide) effective January 30, 2023
 - This includes Bio Sketch and Current & Pending formats



Timeline

- **September 1, 2023** (*Sustained Resources* track only) – Deadline for ***required*** submission of Concept Outline
 - Program feedback provided within 30 days
- **December 1, 2023** – target date for **all** proposal submissions (*Innovative Resources* and *Sustained Resources*)
 - *Limited* exceptions will be made for proposals received after the target date
- **April–June 2024** – expected notification of award/decline decisions
- **Future competitions:**
 - *Sustained Resources*: Target date **December 6, 2024** (Concept Outlines by Sept. 6)
 - *Innovative Resources*: Target date **December 5, 2025**



OTHER CONSIDERATIONS

Topics to be covered:

- Resources for proposers
- Q&A session

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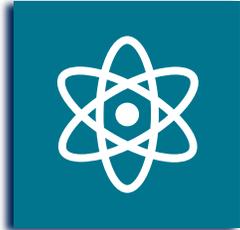


Resources for proposers

- Read the solicitation carefully! (NSF 23-594)
- This presentation will be posted on the Geoinformatics program page
- Proposers are encouraged to reach out to Program Contacts with specific questions.
 - *SUGGESTION: To facilitate well-informed advice from NSF, it is helpful to provide a 1-page project summary when reaching out*



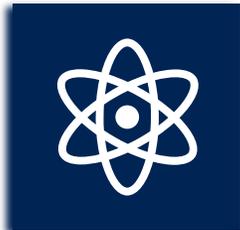
Geoinformatics Q&A



To ask a question, please use



the feature.

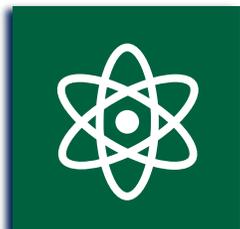


You may submit questions at any time.
You may send questions anonymously:

How can...|

Send anonymously

Cancel Send



Webinar / Q&A will be **recorded** and posted on the Geoinformatics program page
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Please direct further questions to any of the below program contacts:

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Alicia Armstrong

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Geoinformatics long-term plan

The Geoinformatics program seeks to balance sustaining existing cyberinfrastructure (CI) resources with enabling new CI innovation for the Earth Sciences.

